ACTIONS COMMON TO ALL ALTERNATIVES

PARKS' GOALS

Given the purpose, significance, and what visitors should have the opportunity to learn, the following goals were developed. These are broad conceptual goals for the future of the parks that focus on results and conditions and not on efforts or actions.

Preserve and Protect the Parks' Resources

The natural and cultural resources of the parks are preserved and protected.

Lands, ecosystems, and processes that have been altered by modern human activities are restored or replicated.

RNSP visitors and the general public understand the significance of American Indian cultures in the history of the region. Knowledge of the American Indian cultural connection to the parks' resources is recognized and used in the management, protection, and interpretation of those resources.

Redwood National and State Parks serve as a laboratory for scientific study and research that promotes preservation, restoration, and understanding of the parks' resources. Management decisions about resources and visitor use are based on and supported by adequate scientific information.

Provide for the Public Enjoyment and Visitor Experience of the Parks

RNSP visitors and the general public experience, understand, and appreciate the parks' resources, and support their preservation.

Visitors are satisfied with the availability, accessibility, diversity, and quality of RNSP facilities, services, and appropriate recreational opportunities.

Visitors experience the parks in a safe manner.

Ensure Organizational Effectiveness

All RNSP staff understand how their work supports the accomplishment of the goals and are committed to carrying out their roles and responsibilities in a coordinated effort.

RNSP facilities serve ongoing needs and demands, are sustainably designed and constructed, and are appropriately located and maintained.

Sustainability

Sustainability could be defined as the capability of natural and cultural systems to maintain themselves over time. Examples would include the Redwood Creek watershed ecosystem that is restored to the point that all components and processes of the watershed can sustain themselves indefinitely, changing only according to natural succession and processes. Components would include such things as large redwood trees along the main channel of Redwood Creek, historically and prehistorically occurring fish species in Redwood Creek and its tributaries, and marbled murrelets and spotted owls in the watershed forest, all with healthy reproducing populations and historical and prehistorical numbers.

Sustainably designed facilities might include buildings made of recycled materials that require minimum energy and no toxic materials to produce and that are themselves nontoxic to living systems. These materials would also be very long lasting and would perform very well. The buildings would function with a minimum amount of energy. Management actions consistent with sustainability would minimize impacts on natural and cultural systems over the long term.

PUBLIC USE, RECREATION, AND VISITOR SAFETY

If not carefully managed, public use has the potential to damage natural and cultural

resources. To determine the level of visitor use that could be allowed without adverse impacts on resources or visitor experience, a visitor carrying capacity analyses would be conducted and carrying capacities would be established for several sites in the parks. These site-specific capacities would be based on standards and indicators of resource condition and visitor experience. Indicators for resource condition and visitor experience would represent the desired conditions and would be measurable and quantifiable rather than subjective.

Some examples of indicators are the amount of vegetation on the ground within a 15-foot radius of a large redwood tree, the number of shortcut trails, or the number of other hikers a visitor may encounter on a weekend day. Examples of standards are 75%, 50%, and 25% of ground vegetation typically seen around a comparable redwood tree, or no more than zero, 10, or 20 visitors encountered on a weekend day. Conditions for each indicator would be monitored, and when an indicator exceeds the acceptable standard for a given level of use, predetermined management actions would be taken to bring the resource condition or visitor experience back to the accepted standard.

MANAGEMENT ZONES

Management zones provide future guidance in managing areas of the parks for which there currently are no issues or action statements.

The parks are a mosaic of resources that are influenced by a variety of factors, including natural forces, how and when visitors use these resources, and how easily the resources could be changed by management activities and visitor use. Management zoning is a tool that is used to identify how different pieces of the mosaic would be managed to achieve the overall goal of each alternative and the desired conditions in each zone. A particular combination of physical, biological, social, and management conditions is specified for each management zone. To achieve these conditions, different types and levels of use, management, and facilities are allowed in each management zone.

Eight zones are described that apply to alternative 1 and alternatives 3 and 4. Five zones cover most of the parks — the development zone, the frontcountry zone, the two backcountry zones, and the primitive zone. The separate Bald Hills zone allows management of the complex interplay between the natural and cultural history of this area. A cultural resource zone and a transportation zone with two subzones cover the remaining portions of the parks. The following table shows the zones and their characteristics.

The zones for the no-action alternative (alternative 2) are taken from the *General Management Plan for Redwood National Park* (NPS 1980) and use slightly different terms. These zones are described under the alternative 2 discussion.

The boundaries on the zoning maps in this document that accompany each alternative are approximate.

Activities and facilities allowed in more restrictive zones such as the primitive or backcountry zones would also be allowed in less restrictive zones, such as the frontcountry or developed zones, but not vice versa. Not all activities or facilities allowed in a zone would be expected in all portions of a zone. For example, utility corridors are allowed in developed, frontcountry, and transportation zones, but not all of these zones contain utility corridors.

Visitors in areas near the edges of the more restrictive backcountry and primitive zones that are near higher use zones would have fewer opportunities for solitude. For example, the interior of the backcountry zone and the portion of the backcountry zone that borders a primitive zone would be expected to provide greater opportunities for solitude than the edge of the backcountry zone adjacent to a frontcountry zone.

Areas zoned backcountry, nonmechanized, and primitive within the three state redwoods parks that are of sufficient size would be proposed to the California State Park and Recreation Commission for classification as state wilderness in accordance with the state's *Public Resources Code.*

TABLE 1: THE MANAGEMENT ZONES

Zone	Resource Condition or Character	Visitor Experience	Appropriate Kinds of Activities or Facilities
Developed Zone	• Facilities and other signs of human activity rather than resources would be the dominant features in this zone, but natural elements would also be present. • Resources would be intensively managed for visitor use and RNSP operational needs. Visitors and facilities would be intensively managed for resource protection and public safety. • Visitors might see resources that receive special protection by law or that are easily damaged from this zone, but these resources would generally not be included within this zone. • This zone would be restricted to as small an area as necessary to provide essential services.	• Facilities would be convenient and designed to harmonize and blend with the adjacent resources. • These areas would provide opportunities for many social interactions, and the probability of encountering other visitors or RNSP staff would be very high. • There would be little need for visitors to physically exert themselves, apply outdoor skills, or make a long time commitment to see an area of interest once they have arrived there. • Opportunities for adventure or solitude would not be emphasized. • Quiet would not be expected, and noise levels would occasionally be high.	• visitor centers • large parking lots • picnic areas in heavily impacted areas away from primary resources and where infrastructure may be provided • administrative facilities including housing, maintenance shops, offices, and storage areas
Frontcountry Zone	• Zone would contain predominantly natural features, but structures and the sights and sounds of people would be evident. • Visitors, sites, and facilities would be intensively managed to ensure resource protection and public safety. • The natural environment would be modified for essential visitor and RNSP operational needs, but only in a way that harmonizes with the setting and retains the dominant characteristics of the surrounding environment.	• Visitors would feel that they were in a natural park setting, but development would be evident. • There would be easy access to developed or transportation zones. • There would be ample opportunity for social interaction. • At certain times of day or season, there would be opportunities for solitude, but in general the probability of encountering other visitors would be high. The probability of encountering RNSP staff would be moderate. • This zone would offer a fairly structured experience, with onsite interpretation and education. • Visitors might be required to make a short time commitment and might need to physically exert themselves to a very small degree. • There would be limited challenge or adventure and little need for outdoor skills. • Quiet would not be required as an essential part of visitor enjoyment, but moderate to low noise levels would be desirable.	• trailhead parking • high-standard and high-use trail corridors that access prime features such as cultural sites or scenic areas • trails that are accessible to visitors with disabilities • scenic overlooks off transportation corridors • picnic areas with limited infrastructure • large, drive-in campgrounds and associated administrative facilities • utility corridors in otherwise natural areas • hardened trail surfaces, interpretive facilities and signs, and limited infrastructure would be allowed

Zone	Resource Condition or Character	Visitor Experience	Appropriate Kinds of Activities or Facilities
Backcountry Zone, Mechanized	•This zone would appear mostly natural, containing natural areas with generally pristine conditions and previously disturbed areas that have been or will be restored to natural conditions, as well as areas containing facilities of a more primitive nature than those in the frontcountry zone. • Resource modification and degradation from visitor use would be low in this zone.	• This zone would provide visitors a sense of being immersed in a natural landscape. • The visitor experience would emphasize discovery. • Visitors would feel somewhat distant from most comforts, conveniences, and facilities. • The chance of solitary experiences would increase with increasing distance from transportation, developed, or frontcountry zones. The chance of encountering visitors or RNSP staff would be very low in most of the zone. • Visitors would generally have to commit a block of time, have outdoor skills, and exert themselves to use areas in this zone. There would be possibilities for challenge and adventure. • Quiet would generally be expected, but occasional moderate noise levels, especially near transportation and frontcountry zones and primarily from other visitors and maintenance activities, would be tolerated. • Visitors might periodically encounter ongoing rehabilitation and restoration projects.	• Essential facilities would be evident, but the facilities would be very limited and would harmonize with the natural environment. • Facilities or structures would not be placed near easily damaged resources unless the resources could be protected and the facility was unobtrusive. • Facilities would be more rustic, in harmony with the less developed nature of this zone, and could include • small walk-in or equestrian campgrounds with water and compost or pit toilets • small designated camping areas with no amenities • designated unpaved hiking or equestrian trails or designated biking trails with bridges • primitive trails with no improvements • walk-in picnic areas • small signs for visitor safety and resource protection. • A moderate level of management of both resources and visitors would be provided for visitor safety and resource protection, e.g., restricting off-trail use. • The parts of this zone that are adjacent to frontcountry zones would be expected to contain greater levels of development than the interior of this zone or than areas adjacent to primitive zones. The parts of this zone that are adjacent to primitive zones would be less suitable for the development of facilities or for recreational uses that involve mechanized equipment (such as mountain bikes).
Backcountry Zone, Nonmechanized	• Same as backcountry mechanized subzone, but no noise from use of mechanical forms of transportation would be allowed within the zone.	• Visitor experiences in these areas would be similar to the description for the backcountry mechanized zone, with gradually less noise and intrusion as visitors move through this zone toward the primitive zone. • Visitors might periodically encounter ongoing rehabilitation and restoration projects.	• Facilities would be more primitive than those allowed in the backcountry mechanized zone. After disturbed areas in this zone have been restored, no form of mechanical transport such as bicycles would be allowed in this zone. Other activities or facilities allowed could be • hiking or equestrian trails • generally unimproved stream crossings with infrequent trail bridges only where needed for public safety • designated areas for camping, normally without facilities • small signs essential for visitor safety

Zone	Resource Condition or Character	Visitor Experience	Appropriate Kinds of Activities or Facilities
Primitive Zone	• This zone would be the most natural of all the zones, and would have areas with pristine conditions as well as areas with dense vegetation that are extremely difficult to enter or move through without trails; thus this zone is unlikely to be visited by most RNSP visitors. • This zone includes areas where very low use is desirable to protect certain resources. • The tolerance for resource degradation from visitor use would be low. • A low noise level from human-caused sources would be an essential resource condition in the interior of the zone.	•Visitors to the primitive zone would experience a natural setting, with the least evidence of development of any of the zones. • The primary experience would be one of discovery only, in an area that would be difficult to walk through. • Human use after the restoration of lands damaged by previous land use would likely be extremely low, either because of management restrictions or physical difficulty for human access. • Evidence of impacts from others would be minimal. • Chances for social interaction or encounters with RNSP staff or other visitors would be extremely low. •Opportunities for independence, closeness to nature, tranquility, and solitude would be abundant. • There would be many opportunities for challenge and adventure. Visitors would have to exert themselves physically and perhaps mentally, and commit a relatively large block of time to explore in this zone because of the generally difficult topography, dense vegetation, and lack of developed access. Outdoor skills such as route-finding would be necessary. • Visitors might periodically encounter ongoing rehabilitation and restoration projects.	• No facilities or development would be allowed in this zone other than existing trails. • No new trails would be constructed in this zone. • Only foot access would be permitted. • Heavy equipment would be needed temporarily to restore natural conditions in damaged watersheds included in this zone. • Following the restoration of previously disturbed areas, management would be limited to those actions necessary to protect human health and safety and to restore natural processes that have been or continue to be altered by modern human influences. Onsite management and restrictions would be minimized and would be subtle.
Little Lost Man Creek Research Natural Area Subzone[1]	•This research natural area would be intended to be the most pristine area within the national park. •Natural processes would be allowed to continue unhindered by any management action. • A low noise level from unnatural or human sources would be essential in the interior of the zone.	•Visitors would not be encouraged to enter this zone. •There would be no evidence of modern human presence or use of the area. •The probability of encountering other visitors or NPS staff would be very low. • Visitors would need to physically exert themselves and apply outdoor and route-finding skills to make their way in this zone. They might need to make a long time commitment to see the area. • Opportunities for solitude would be excellent.	• No facilities or any other kind of permanent structure or modification would be appropriate. • By NPS policy, activities in resource natural areas are restricted to nonmanipulative research, education, and other activities that would not detract from the area's research values.

Zone	Resource Condition or Character	Visitor Experience	Appropriate Kinds of Activities or Facilities

Transportation Zone
 	
High-Standard Subzone — covers paved state highways
	• U.S. Highways 101 and 199 and State Highway 197 are in this zone and are under the control of Caltrans (the California Department of Transportation).
	• The desired conditions for RNSP resources in this zone must be integrated with the requirements to provide safe and efficient transportation for highway users.
	• Resources might be highly modified within this narrow corridor for operational and safety needs.
	• Adjacent RNSP resources and the visual qualities of the road corridor would be recognized as having significant regional value and would be protected accordingly.
	• The protection of ancient redwood forests would be of paramount importance.
	• This subzone would be made as narrow as possible to allow for the protection of the resources adjacent to the subzone and to limit the intrusion on RNSP resources and visitor enjoyment of the parks. However, this subzone would be wide enough to accommodate the development of safety pullouts, scenic overlooks, trailheads, and interpretive exhibits where appropriate.
	• Noise generated by traffic in this zone might affect the resources, particularly wildlife, in adjacent zones.
		• The highway corridors should provide a world-class transportation experience.
		• All travelers should have a sense of being in a park environment. The experience would be primarily visual or vicarious.
		• The subzone would be used by visitors for touring the parks, enjoying scenic overlooks, and gaining access to other zones.
		• The visitor experience would depend on a motorized vehicle or bicycle and involve driving or bicycling along well-maintained paved roads. Portions of the highways, particularly Highway 101, are not well suited to safe and leisurely bicycling because of the speed and size of motorized vehicles on the highways and because the shoulders are narrow or absent.
		• Facilities for basic visitor orientation and signs would create a sense of arrival and awareness of being in a park.
		• Visitor attractions would be convenient, but visitors unfamiliar with the area might have difficulty identifying and stopping at attractions along Highway 101 because of the speed of travel.
		• The probability of encountering other users would be very high.
		• There would be no need for visitors to exert themselves, apply outdoor skills, or spend a long time in the zone.
		• Noise generated by traffic and maintenance activities in this zone might compromise resource values in adjacent zones, particularly quiet and a sense of solitude.
			• The placement of signs and facilities would require the approval of Caltrans.
			• Recreational activities such as bicycle riding would be accommodated within public safety and resource constraints.
			• Visitor use and operational facilities would be intensively managed for safety of all users.
			• Activities and facilities could include
			  • paved roadways with associated signs, barriers, and traffic control devices,
			  • law enforcement and other restrictions on visitor activity
			  • interpretive media
			  • utility corridors
			  • scenic overlooks, trailheads, and safety pullouts

Zone	Resource Condition or Character	Visitor Experience	Appropriate Kinds of Activities or Facilities
Low-standard Subzone — applies to most other roads in the parks	• Some low-standard roads are under county control. • A moderate amount of resource modification would be necessary to provide for RNSP operational needs, public safety, and administrative access. •This subzone would be as narrow as possible to allow for the protection of adjacent resources. • Noise in this subzone would be less than in the high-standard subzone because of the lower traffic speeds and volume. • There would be correspondingly less effect on the wildlife in adjacent zones.	• The visitor experience would be primarily visual within this subzone and would depend on driving a motorized vehicle or bicycling along a paved or unpaved road. • This subzone would be used by visitors for touring the parks, seeing resources, enjoying scenic overlooks and interpretive media, and gaining access to other zones in the parks. • Visitor attractions would be convenient and might be easier to stop at than in the high-standard subzone because of the generally lower speed of travel. • Bicycling along these roads would be safer than in the high-standard subzone because of less traffic and lower speeds. • Chances to observe the natural environment would be important. • There might be a sense of adventure, but there would generally be little need for visitors to exert themselves, apply outdoor skills, or spend a long time in the area. • The probability of encountering other visitors or RNSP staff would be moderate to low. •Some roads in this zone would be closed to visitors in motorized vehicles. • Noise generated by traffic and maintenance in this subzone might compromise resource values in adjacent zones, particularly quiet and a sense of solitude, but the impact on visitors would be much less than in the high-standard subzone.	• Activities and facilities could include • paved or unpaved roads and associated signs, barriers, and other traffic control devices • paved or unpaved pullouts • interpretive media • roadside parking and picnic areas with comfort stations • utility corridors • scenic overlooks, trailheads, and safety pullouts • Visitors and facilities would be intensively managed for safety.

Zone	Resource Condition or Character	Visitor Experience	Appropriate Kinds of Activities or Facilities
Bald Hills Zone	• The Bald Hills contain a unique mixture of cultural influence on an uncommon natural resource. Although the natural resources might be the most prominent feature, the existence of the Bald Hills can be attributed to a long history of cultural effects. Within this zone, cultural resources and their protection might take precedence over natural resources or vice versa. • The contributing elements of the historic and archeological national register districts, such as structures, orchards, roads, water systems, and archeological sites, would be preserved. Vegetation management would be implemented according to the *Bald Hills Vegetation Management Plan* (1992). • Essential facilities would be evident, but the facilities would be limited and would harmonize with the natural and cultural environment. • Resource modification and degradation from visitor use would be low in this zone. • This zone would include recently disturbed areas with processes that have been or will be restored to near natural conditions.	• The Bald Hills zone would provide visitors with a sense of being immersed in a natural landscape with opportunities to appreciate the cultural history of the area. Awareness of the natural environment might be a prominent part of the experience in portions of this zone, while in other areas the cultural environment might be the prominent experience. • The visitor experience would emphasize discovery. • Visitors would feel somewhat distant from most modern comforts, conveniences, and facilities. Some facilities would be provided for visitor support and enjoyment of the resources. • The chance of solitary experiences would increase with increasing distance from the transportation zone. The chance of encountering visitors or RNSP staff would be low in most of the zone, although visitors might encounter staff engaged in various resource management activities. • Visitors would generally have to commit a block of time, and exert themselves in some areas, to visit this zone. In general, there would be possibilities for challenge and adventure, and learning about of past human influence in a seemingly natural landscape. • Quiet would generally be expected, but occasional moderate noise levels, especially near transportation zones and primarily from other visitors and maintenance activities, would be experienced.	• Appropriate facilities in this zone are those that would harmonize with the essential characteristics of the natural and cultural resources and that would be critical to visitor enjoyment and understanding of the zone, including • small walk-in campgrounds with water and compost or pit toilets • primitive trails with no improvements • walk-in and roadside picnic areas • small signs or appropriate wayside exhibits for visitor interpretation and safety and resource protection • self-guiding tours • Facilities or structures would not be placed near easily damaged resources unless the facility was unobtrusive and the resources could be protected. • Special emphasis would be placed on the protection of American Indian sacred and ethnographic sites. • A moderate level of management would be provided for visitor safety and resource protection, e.g., restricting off-trail use, fire line construction around barns, etc.

Zone	Resource Condition or Character	Visitor Experience	Appropriate Kinds of Activities or Facilities
Cultural Resource Zone[2] — includes cultural roads and trails	• Within this zone, cultural resources might take precedence over natural resources. • The desired character or condition of resources in this zone would depend on the specific resource. • The surrounding areas, and in certain cases the resources themselves, might be modified for resource protection and visitor safety. However, the modification of the essential or defining characteristics of the resource would generally only be allowed with research and extensive documentation. Some of these resources might be in areas that are substantially developed, but the resources themselves would be protected through sometimes intensive management of visitor use.	• A broad spectrum of visitor experiences would be available in this zone. • The visitor experience would vary with the type and sensitivity of the resource. In some cases, visitors would be able to experience the site as the original human users did; entry to other sites would be subtly discouraged, prohibited, or intensively managed to protect the resource. • Awareness of the natural environment might be a prominent part of the experience in much of this zone; however, this awareness might be an almost insignificant part of the experience at other sites in this zone. • The probability of encountering other visitors or RNSP staff would vary substantially for different sites. • Generally, there would be little need for visitors to exert themselves, apply outdoor skills, or spend a long time in the zone. • Opportunities for solitude and tranquility would not be critical to the primary experience in most areas within the zone.	• Appropriate facilities in this zone are those that would harmonize with the essential characteristics of the resource and that would be critical to visitor enjoyment and understanding of the site. • The nature and location of the resource with respect to other zones would partly determine what activities or facilities were appropriate. • Low-standard roads, trailheads and trails, picnic areas, vault toilets, fencing, signs, and interpretive media would be appropriate in some areas. In other areas such as sites sacred to American Indians, no structure that would draw unwanted attention to the site or facilities would be provided. Facilities that divert visitor attention from sacred sites might be appropriate.

1. The **Little Lost Man Creek Research Natural Area** would be a subzone of the primitive zone. This zone encompasses 2,250 acres of largely unmodified forested stream basin. Because public entry is assumed to be extremely low because of the difficulty of walking through this zone, special or intensive management would be unnecessary at this time. A research natural area is defined under NPS management policy as a special designation granted by the NPS director and applied to prime examples of natural ecosystems and areas with significant genetic resources with value for long-term baseline observational studies or as control areas for comparative studies involving manipulative research outside the national park. These areas are to be managed to provide the greatest possible protection of site integrity.

2. For their protection, archeological sites and some of the resources that are held as significant by American Indians within this zone will not be identified on maps or documents.

RESTORING DISTURBED LANDS

The various alternatives present and analyze the impacts of two approaches for treating abandoned logging and ranch roads — the **road decommissioning approach** and the **landform restoration approach** (see table 2). There are two types of landform restoration — partial and complete. Partial landform restoration is complete removal of all major logging roads and limited removal of minor logging roads (skid roads) that are the biggest threat to the parks' resources. Complete landform restoration includes the removal of all major and minor logging roads and restoration of the landscape. Most of these abandoned logging and ranch roads are within the Redwood Creek basin in the national park. The road decommissioning approach focuses on reducing the potential for erosion at stream crossings and unstable road segments. In contrast, the landform restoration approach includes road decommissioning prescriptions, and also includes landform restoration where roads are obliterated and reshaped to a prelogging configuration. The alternatives described in this document include components of both of these restoration treatment styles.

Common to both approaches is constructing rolling dips at stream crossings and minimal road maintenance until the roads are treated through the restoration program. In addition to road decommissioning and restoration on parklands in lower Redwood Creek, RNSP staff would provide technical assistance upon request to private landowners for erosion prevention on roads upstream from park boundaries. Erosion prevention techniques include constructing rolling dips at stream crossings, replacing deteriorating or undersized culverts, and reconstructing unstable road fills. Some road segments in the upper basin would be decommissioned, when agreed upon by the landowners. This work in the upper basin would protect downstream alluvial redwood groves and aquatic habitat in the main stem of Redwood Creek, including the reach within the national park. Improvements in forest practice rules prevent similar damage from occurring, making NPS and private restoration efforts worthwhile. As much as possible, road maintenance and watershed restoration activities would be done before the rainy season or when areas have dried out.

Restoring Disturbed Lands in the State Parks (i.e., outside Redwood Creek Basin)

Throughout this document, the calculations, numbers, and miles of roads used in describing the watershed restoration program apply only to the Redwood Creek basin, the lower part of which is within the national park and the upper part of which is upstream (south) of the national park boundary. Because the most direct and extensive damage to what is now RNSP land occurred in the Redwood Creek basin, the inventory of needed rehabilitation work has been done almost solely for this area.

Although the most substantial damage to RNSP resources from logging occurred in the Redwood Creek basin, this basin is not the only watershed in or just outside the RNSP boundary that needs restoring. For example, the Mill Creek basin in Jedediah Smith Redwoods State Park, the upper west branch of Mill Creek in Del Norte Coast Redwoods State Park, and those portions of the Prairie Creek watershed containing the headwaters of the east side tributaries in Prairie Creek Redwoods State Park have been impacted by past logging activities. These areas have not been inventoried to assess needed rehabilitation.

Although the emphasis would continue to be on the Redwood Creek basin, under all alternatives RNSP staff would monitor the effects of activities in these other areas/watersheds, and RNSP watershed restoration staff would take appropriate steps if significant threats to resources were anticipated.

TABLE 2: COMPARISON OF METHODS OF TREATMENT FOR ABANDONED LOGGING ROADS IN AND UPSTREAM OF THE NATIONAL PARK

Method of Treatment*	Road Decommissioning (upstream of the National Park)	Landform Restoration (within the National Park)
Summary	Reduce erosion potential at stream crossings, unstable road segments, and along steep, unstable hillslopes. Restore primary hydrologic patterns.	Reduce erosion potential at stream crossings and along all intervening road segments. Restore prelogging landforms and hydrologic patterns by reconstructing natural topography.
Treatments	Remove culverts, uncover buried stream channels, decompact road surfaces, and excavate only the unstable road fill. Configure the treated slopes for long-term drainage.	Remove culverts, uncover buried stream channels, pull back all road fill, and decompact road surfaces. Restore the shape of the original slope and original drainage patterns. Spread the original topsoil, forest duff, and organic matter on the finished surfaces.
Duration of Program	Would require less time for treatment of each road segment compared to landform restoration.	Would require more time for treatment of each road segment compared to road decommissioning.
Miles of Logging Roads to be Treated	911 miles	155 miles
Benefits to Resources	More quickly protect a greater length of aquatic habitat against immediate erosional threats. Could provide better overall protection if a large enough storm were to occur soon. Preserve more second growth. Short-term protection provided by erosion prevention including rolling dips.	Provide better long-term protection to a shorter length of aquatic habitat within a given period of time. More long-term stability with fewer failures after end of program. Faster reestablishment of soil and vegetation. Short-term protection provided by erosion prevention including rolling dips.
Threats to Resources during and after Treatments	Hillslope failures could occur after completion of the program, especially along road segments that have not been fully restored. Failures before and after program completion could damage downslope and downstream resources.	Due to the slower treatment rate, more road mileage would be left untreated for a longer time and vulnerable to catastrophic erosion during a large storm or earthquake. Failures from untreated roads, before completion of program, could damage downslope and downstream resources.
Cost per Mile	Less than landform restoration.	More than road decommissioning.

* Methods vary by 25% to 40% per site in terms of cost and time required. Increased funding would speed the progress of either method of treatment and allow the RNSP staff to more quickly and completely remove abandoned roads.

Efforts to reduce erosion potential at stream crossings on national park lands are common to all alternatives and, as part of the national parks' *Erosion Control and Disturbed Lands Restoration Plan*, would be completed by 1999 and monitored and maintained thereafter. This reduction of erosion potential at stream crossings would not occur on state park lands. The construction of rolling dips or drains at stream crossings would eliminate excess water from flowing down the roads or inboard ditches and causing accelerated erosion, gullying, landslides, or road fill failure. The road would still remain drivable, and treatment would not preclude more intensive restoration treatments in the future.

Within the National Park

Landform restoration would be most comprehensive near high visitor use areas. In these areas, major roads and minor roads would be removed, restoring the natural shapes of hillslopes. Rolling dips would be constructed on all remaining roads as necessary to address short-term erosion hazards on roads until they are removed.

In the Upper Redwood Creek Basin

RNSP staff would engage in cooperative activities with upstream landowners. These activities might include, but would not be limited to, review of proposed timber harvest regulations and activities; erosion prevention and road removal in cooperation with landowners; improvements in the location, design, and maintenance of active roads; and database development for cooperative basinwide resource management.

As directed by the 1978 legislation, RNSP staff would continue to monitor and study "erosion and sedimentation originating within the hydrographic basin of Redwood Creek with particular effort to identify sources and causes including differentiation between natural and man-aggravated conditions" (PL 95-250).

WETLANDS

Areas in the parks that would be affected by soil or vegetation disturbance would be surveyed for the presence of wetlands as part of project planning. If areas are present that might be classified as wetlands under either the Army Corps of Engineers or NPS definitions, a more detailed wetland delineation (mapping) would be performed. The California Department of Parks and Recreation would use the broader NPS wetland definition and guidelines for protecting wetlands.

Wetlands that have been damaged or degraded by previous land use would be considered for restoration, either to mitigate adverse impacts or to meet the goals and intent of the NPS wetland protection guidelines. Original functions and values of each wetland would be restored to the greatest extent practicable.

Adverse impacts on wetlands from activities proposed under any alternative in this joint plan would be avoided to the greatest extent possible. Any adverse impacts on wetlands for which mitigation is prescribed would be mitigated on at least a 1:1 ratio in the same drainage and as close as possible to the impacted area.

THREATENED AND ENDANGERED SPECIES

If any state or federally listed or proposed threatened or endangered species were found, or if designated critical habitat exists in areas that would be affected by construction, visitor use, or restoration activities proposed under any of the alternatives in this joint plan, RNSP staff would first consult informally with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and/or the California Department of Fish and Game. RNSP staff would attempt to avoid, minimize, rectify, reduce, compensate, or otherwise mitigate any potential adverse impacts on state or federally listed or proposed or candidate threatened or endangered species. Ongoing staff actions and RNSP operations would also be included in consultations. Should it be determined through informal consultation that an action or proposed project might adversely affect a listed or proposed species, RNSP staff would initiate formal consultation under section 7 of the Endangered Species Act or as required under the California Fish and Game Code and/or the California Endangered Species Act.

No state or federally listed, proposed, or candidate threatened or endangered plant species are known to occur within Redwood National and State Parks. RNSP botanists would continue to conduct surveys for these and other rare or sensitive species incidental to other projects. If sensitive plants were located, more intensive surveys of similar habitats would be conducted to determine the extent of rare plant populations in the project area. Management emphasis of sensitive plant species would be on the popula-

tion level to ensure their survival within the parks. Should any sensitive plants be discovered in project areas, the plants would be protected from human-caused disturbance, and the project would be redesigned to avoid direct impacts on the plants and their specific habitat if possible. Should it be determined through informal consultation that an action or proposed project might adversely affect a listed or proposed species, RNSP staff would initiate formal consultation under section 7 of the Endangered Species Act or with the California Department of Fish and Game, as required under the California Fish and Game Code and the California Endangered Species Act.

CULTURAL RESOURCE MANAGEMENT AND PROTECTION

The National Park Service, as caretaker of many of the nation's most significant cultural resources, is mandated by a variety of historic preservation laws, e.g., the National Historic Preservation Act (1966 and as amended, most recently, in 1992) and the Archeological Resources Protection Act (1979) to preserve, protect, and manage cultural resources under its jurisdiction for the enjoyment and enlightenment of present and future generations. According to the National Park Service's *Cultural Resource Management Guideline* (1996),

> [c]ultural resource management involves research — to identify, evaluate, document, register, and establish other basic information about cultural resources; planning — to ensure that this information is well integrated into management processes for making decisions and setting priorities; and stewardship — under which planning decisions are carried out and resources are preserved, protected, and interpreted to the public.

Research

RNSP staff conducts research to support planning for and management of RNSP resources. Much research regarding these cultural resources has already been undertaken, including archeological surveys and excavations, historical studies, artifact analysis, and consultations with American Indians. To further the identification, evaluation, and documentation of cultural resources, the agencies propose to

- continue to prepare archeological surveys and assessments of RNSP lands
- prepare cultural landscape inventories and/or cultural landscape reports for all landscapes potentially eligible for listing on the National Register of Historic Places
- initiate ethnographic overviews/traditional use studies of the parks
- prepare historic structure reports for buildings and structures, as necessary
- prepare an administrative history of Redwood National and State Parks
- continue to develop the parks' museum curatorial program

Planning

General management planning for cultural resources is not only guided by research but also by the National Park Service's *Management Policies* (1988) and the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). These policies and standards provide guidelines for preservation planning. The *Secretary's Standards* also provide guidelines for the treatment (preservation, rehabilitation, restoration, or reconstruction) of historic resources that are either listed on or eligible for listing on the National Register of Historic Places.

In addition, because political, social, and economic trends outside of a park's boundaries can profoundly affect managers' abilities to protect its cultural resources, RNSP staff seek to work with surrounding landowners and to actively participate in the planning processes of neighboring jurisdictions, to help ensure that actions outside of the parks do not impair RNSP resources and values. Throughout the joint planning process, opportunities were also provided for other federal and state agencies, such as the

U.S. Forest Service and the California Department of Parks and Recreation, Office of Historic Preservation, as well as American Indian tribes and the public at national, regional, and local levels, to voice their concerns about the management of the parks' cultural resources. Thus, this joint plan reflects an interdisciplinary effort that includes a cross section of national and state park personnel, including planners and resource specialists; representatives of state and local governments, agencies, and organizations; and other interested parties and members of the community-at-large.

In addition, further consultation with the California Department of Parks and Recreation, Office of Historic Preservation, and the Advisory Council on Historic Preservation, as necessary, would be conducted for all actions described in the plan that might affect cultural resources, once plans for these actions become more specific (see appendix K).

Stewardship

Stewardship is the integration of research and planning to avoid or minimize adverse effects on cultural resources and to identify both the most appropriate uses of and treatment of cultural resources. The following strategies for managing the cultural resources of Redwood National and State Parks are common to the four alternatives described in the joint plan:

- Any action that affects cultural resources would be undertaken only if it is consistent with the parks' purposes and applicable NPS and CDPR policies, guidelines, and standards. Any preservation, rehabilitation, restoration, and reconstruction efforts, as well as the daily, cyclical, and seasonal maintenance of cultural resources, would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and any applicable state regulations.

- The emphasis in actions involving both cultural and natural resources would be weighted toward the protection and preservation of the resource(s) that would be most easily damaged.

- The parks' archeological, historic, and ethnographic resources would continue to be identified, evaluated, and nominated, as appropriate, for listing on the National Register of Historic Places.

- Options for the parks' historic structures would include adaptive rehabilitation, the historic property leasing program, interpretation, and discovery sites. Nonhistoric noncontributing features would be removed from the parks' cultural landscapes.

- Relations between the Yurok Tribe, the National Park Service, and the California Department of Parks and Recreation would be managed in accordance with applicable laws and agreements.

- RNSP staff and local tribes would place special emphasis on working together on cultural resource issues, including but not limited to: exchanging information regarding cultural resources and their protection, interpreting Indian cultures, and protecting artifacts from Indian aboriginal territories that are now part of the parks' collections.

- RNSP staff would continue to work in partnership with representatives of American Indian tribes and preservation interest groups to balance the management of cultural resources with interpretation, education, and visitor use. Expertise available from sources outside the parks would be recruited on a cooperative, collaborative basis to expand RNSP staff capabilities and share information. In addition to the tribes, these sources could include professional and avocational organizations and societies, academic institutions, and qualified volunteers.

- The nature and extent of visitation and use would be managed in a manner that minimizes impacts on the parks' cultural resources.

- RNSP staff would work with neighboring landowners and jurisdictions to ensure that adjacent land management practices would not impair the parks' cultural resources, viewsheds, or distant vistas.
- RNSP staff would develop solutions to accessibility requirements that minimize impacts upon cultural resources.

Traditional Yurok dwelling made from split redwood logs.
NPS photo.

VISITOR ACCESS AND CIRCULATION

U.S. Highways 101 and 199 would remain the main access routes to and within the parks. Minor realignments might take place in the future, but the highways are expected to remain generally within current alignments over the life of this joint plan. If major realignments take place during the life of this joint plan, RNSP staff would work with Caltrans (the California Department of Transportation) and the Federal Highway Administration to ensure proper protection of the values and resources of the parks.

RNSP staff would work with Caltrans, the Federal Highway Administration, and local government agencies to ensure that visitors would have a world-class scenic travel experience while traveling on the 101 and 199 highway corridors and that these routes would convey to travelers a sense of being in a park environment. The visual qualities of the road corridors that have significant regional value would be identified and protected. Associated recreational activities, such as bicycle riding, would be accommodated within public safety and resource constraints. In all cases, the protection of ancient redwood forests would be of paramount importance. RNSP staff would also work with Caltrans and the Federal Highway Administration to ensure environmentally sensible maintenance operations and environmentally sensible efforts to remove major traffic impacts from these highways on RNSP values and resources.

BOUNDARY MAP ADJUSTMENTS

PL 95-625 requires that NPS general management plans include measures for protecting the parks' resources and "indications of potential modifications to the external boundaries of the unit and the reasons therefore." The official legislated national park boundary map included in the 1978 Expansion Act does not accurately depict current landownership due to state and federal land acquisitions since the date of the act. The official map must be updated to reflect the changes that have occurred since 1978, and provisions should be made to keep the map current in light of expected future land acquisitions.

Recent NPS land acquisitions in the scenic corridor (16 U.S.C. 79[c][d]) between Orick and Prairie Creek Redwoods State Park, and in the park protection zone (16 U.S.C. 79[b][c]), and minor boundary adjustments elsewhere would be included in the legislated national park boundary by publishing a revised drawing or boundary description in the *Federal Register.*

Recently acquired CDPR lands would also be included in the revised drawing. Future acquisitions of land or interests in lands would be included in the boundary through a similar *Federal Register* notice.

WILDERNESS PROPOSALS

No federal lands would be proposed for wilderness designation. (Note: State wilderness proposals vary by alternative.)

FUTURE ACTION PLANS NEEDED

The development of the alternatives in this document sets the overall vision and direction for the parks and identifies future planning needs and a sequencing strategy for those needs. However, the following studies will be needed, under any alternative, to fully implement the approved final joint plan for managing the parks. New or updated plans would cover both national and state parks. These plans would be accompanied by an appropriate environmental compliance document as required by NPS and/or CDPR policies and guidelines. The list below is not intended to show priority order or exclude other planning needs that might be identified in the future.

Backcountry Management Plan: The goal of backcountry management would be to develop flexible strategies to protect the parks' resources while providing visitors with a safe, high-quality experience. This plan would address campsite locations, campsite size limits, reservation and permit systems, stock use, trash and sanitation, and emergency services. This plan would also include use of the primitive zone as well as hiking, camping, and equestrian and mountain bike use and guidance concerning the development of a comprehensive trail system and other backcountry facilities. The backcountry management plan would be guided by the desired resource conditions and visitor experiences of the appropriate management zones.

Redwood Creek Estuary Aquatic Resource Management Plan: This plan would outline issues, resource conditions, and threats to aquatic habitats in the estuary, summarize past research, and describe alternatives for restoring natural processes and physical conditions. It will update the 1983 *Management Alternatives for the Redwood Creek Estuary*.

Second-Growth Forest Management Plan: This plan would identify management alternatives to speed the return of ancient forest structure and functions on the approximately 50,000 acres of previously harvested forest in the parks.

Vegetation Management Plan: This plan would identify and describe the parks' vegetation communities, and alternatives for protecting, restoring, and maintaining these communities.

Erosion Control and Disturbed Lands Restoration Plan: This plan would list the priorities for restoration treatments in RNSP watersheds to minimize erosion and restore lands disturbed by past logging and describe the criteria used to establish the priorities. Criteria include sensitivity of threatened resources, degree of threat, and the cost-effectiveness of timely treatment. This plan would update the 1981 *Watershed* Rehabilitation Plan.

Coordinated Resource Management Plan: This plan would analyze the physical and biological conditions within watersheds upstream of the parks, describe the concerns and objectives of landowners, and translate these analyses and concerns into a set of land management practices for each watershed.

Comprehensive RNSP Trail Plan: This plan would describe trails and associated facilities needed to provide recreational opportunities for hikers, equestrians, and bicyclists in the parks. Trails and facilities would be consistent with the resource conditions and visitor experiences in the management zones established in this general plan.

Portions of this plan would update the Redwood National Park 1984 *Backcountry Trail Plan, Redwood and Skunk Cabbage Creeks.*

Wildland Fire Implementation Plan: This plan would identify specific actions needed to implement the appropriate management response to wildland fires. It would describe operational activities; funding, equipment, and personnel needed to control wildland fires; and timeframes and conditions for taking action. The plan would contain information to evaluate strategic management alternatives against safety, environmental, social, economic, political, and resource management criteria. This plan would be a supplement to the 1995 *Fire Management Plan*.

Circulation and Access Plan at Prairie Creek Redwoods State Park: This plan would examine vehicle circulation in the Elk Prairie area. Alternative circulation patterns and locations of the road would be presented.

Bald Hills Visitor Use Management Plan: This plan would specify the interpretive themes to be presented at various locations throughout the Bald Hills, describe the media used to convey the information to visitors, identify the viewsheds to be protected and interpreted, and describe the locations of vehicle parking areas and pullouts, scenic overlooks, and interpretive trails.

RNSP Architectural and Design Guidelines: This plan would provide the basis for managing the visual resources of the parks, including construction materials and design details, plant materials, and architectural features. The plan would include an inventory of the natural and cultural features unique to the parks and the region, identify the most significant visual characteristics, and provide specific suggestions on how to reinforce and incorporate those characteristics into facility design. The guidelines would also address environmentally sound construction methods, materials, and maintenance techniques, and accessibility for all RNSP users.

MITIGATION MEASURES FOR FACILITY CONSTRUCTION

Most construction activities would be done in areas that have already been disturbed by facilities, roads, parking areas, and trails. Mitigation measures would be employed to minimize temporary impacts from construction on soils, streams, wildlife, fisheries, vegetation, riparian zones, and other resources. Such measures would include silt fences, erosion control blankets, sand bags, mulch, and reseeding where appropriate and necessary. Topsoil and vegetation would be salvaged from the construction area and stockpiled for later use in revegetation efforts. Efforts would be made to prevent contamination of the soils with subsoil layers, gravels, or other construction materials. All utilities would be placed underground where practicable.

An undisturbed natural vegetation buffer zone would be maintained along streambanks to protect the riparian zone and aquatic resources from adverse impacts. To minimize contamination from petrochemicals seeping into the soil from construction equipment, vehicles and other machinery would be maintained and checked frequently to identify and repair any leaks. Appropriate restrictions would be imposed on construction and restoration activities in areas that have occupied habitat or unsurveyed suitable habitat for northern spotted owls and marbled murrelets. (For more information see the discussion of rare, threatened, and endangered species in the“Affected Environment” part of this document.)